The Gender-Related Issues in Malignant Melanoma

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The problem of malignant melanoma is important in the United States, in the world as a whole, and particularly in Hawaii with its high levels of ultraviolet radiation. It is estimated that 32,000 Americans will develop melanoma and 6,800 will die of this tumor in 1993. Melanoma is now the seventh most frequent cancer in the United States. It is more common than ovarian, cervical, CNS cancer and leukemia[1].

Both incidence and mortality from melanoma are rapidly increasing. The incidence of melanoma has consistently increased 6% a year and the death rate has increased 2% a year since 1950. At current rates, one in 400 will die of this tumor. Should this rate of increase continue, by the year 2000, it is estimated that one in 75 Americans will develop melanoma during a lifetime. The highest melanoma incidence in the U.S. is found in Hawaii. Melanoma is increasing faster than any other cancer in the United States and all over the world[2].

Gender-specific epidemiologic issues

Most studies show an overall slight preponderance of men over women developing melanoma. The rate of melanoma is increasing most rapidly in persons under the age of 40. Women predominate with a 3:2 ratio from ages 20 to 29 and a 2:1 ratio from ages 30 to 39. Melanoma is currently the most frequent of all cancers in women ages 25 to 29, and second (after breast cancer) in women ages 30 to 34.

Above the age of 40, these curves cross with more men developing melanoma than women. By age 80, men outnumber women almost 2:1 in terms of developing this cancer. Similar findings are being noted worldwide. The reasons for these differences in gender-incidence are as yet unknown.

Prognostic factors

The most important factor that influences survival in persons with melanoma is how deep the lesion has penetrated into the skin. A small difference in tumor thickness can be critical. Almost all persons with melanoma less than 0.75 mm (1/32) will survive while less than half will survive when the lesion is greater than 3.0 mm (1/8 inch) in thickness. Other factors that influence survival include whether the tumor is localized or has spread (stage), if it is eroded and/or has bled (ulceration), and where on the body it is located (anatomic site).

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There are significant differences in survival in men versus women who have developed melanoma. After correcting for other prognostic factors, women have a significantly improved 5- and 10-year survival over men. Data from 1,143 melanoma patients from New York University Melanoma Cooperative Group show a 10-year survival of 83% in women versus 73% in men. (Figure 1) This finding of differences in survival by gender are supported by many other studies in the United States and worldwide.

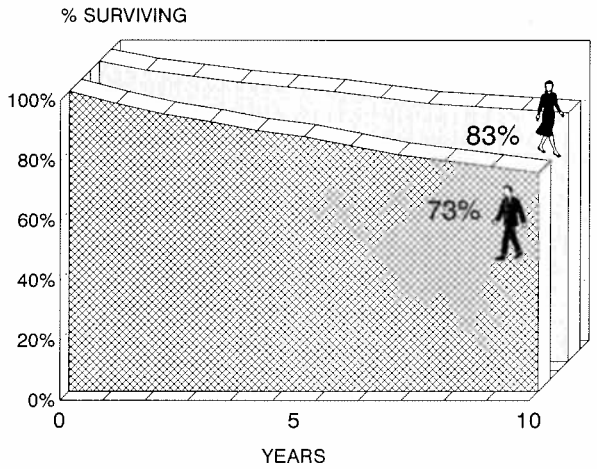

Figure 1: Comparison of 10-year survival in male and female patients. New York University Cooperative Group unpublished data.

Several reasons have been proposed for this difference in survival by gender. First, melanoma is a cancer that is hormonally influenced. Progesterone and estrogen may favorably influence in persons with this tumor. Second, men most often develop their melanoma on the upper back while women often experience lesions on their legs. The difficulty in seeing melanoma arising on the back may result in a delay in diagnosis[3]. In fact studies have suggested that men tend to delay seeing a physician for evaluation of a suspicious lesion as compared to women. This delay lets the melanoma progress resulting in thicker, more often ulcerated tumors that may be more likely to have spread prior to the initial visit to the doctor. These factors would also contribute to a lower rate of survival in men.

Trends in mortality for melanoma also show gender-specific findings. The overall death rate for melanoma in the United States is now 2.7 per 100,000. However, the rate in men is 3.2 per 100,000 versus 2.2 per 100,000 in women. Data from the

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LETTERS TO THE EDITOR *(continued from page 113)*

Editor's note:

Christine Trecker is a 20-year resident of Oahu. She lives on the windward coast with her husband and daughter and enjoys the indoors and outdoors. Her background is in marketing research and advertising.

She realized the need for this type of publication for our residents and our visitors as well. All profits from the book sales go to the Friends of Foster Kids. Books are available at Liberty House and most bookstores..

Norman Goldstein MD

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NEW ULTRAVIOLET MONITORING *(continued from page 116)*

scientific and nontraditional settings. The EMTEC Uviscan™ PDU is a public display unit approximately 1 meter square (Figure 1). Data on UV intensity are displayed as individual "time-to-burn" values for each skin type. (The EMTEC Uviscan™ PDU has been calibrated for skin types 1 to 4.) The unit's display rotates through 360° to ensure maximum visibility from all surrounding areas. A measurement of UV is made at the beginnning of a series of 4 rotations; the unit then displays the estimated time-to-burn for each skin type. When the cycle is complete, the UV sensor takes a new measurement and the display values for each skin type are updated. Measurements are made every 4 minutes, though this rate can be adjusted to suit the unit's particular application. The unit is intended for installation in public recreation areas such as beaches and playgrounds; Figure 1 illustrates the positioning of the EMTEC

Figure 1: Copyright EMTEC Ltd

Uviscan™ PDU above a lifeguard station on Waikiki Beach in Hawaii, one of the first sites to employ EMTEC technology. The unit has been designed so that the display is visible from up to 100 meters away, even under the most glaring conditions.

Two similar but smaller devices are presently being designed: The EMTEC Uviscan™ Professional and the EMTEC Uviscan™ Domestic. The Professional has been designed for use in commercial establishments with high population density, where long-distance visibility is not essential. Hotel swimming pools and tennis courts are 2 typical applications for this device. The EMTEC Domestic has been designed for the home environment, again for use near the swimming pool or during children's backyard playtime.

EMTEC technology also makes possible accurate personal UV monitoring. The pocket-size EMTEC Uviscan™ Personal is an intelligent device that allows the user to insert his or her skin type, suncreen SPF number and the amount of sun exposure per day. The Uviscan Personal then displays the estimated time-to-burn. Every 30 seconds the unit takes new measurements and updates the display accordingly.

A final product is designed for use on children. It is non-programmable, allows for only 1 skin type (type 1) and the parent is required to apply a sunscreen of SPF 15 or higher to the child. In this manner, EMTEC hopes to encourage a relationship between the regular use of sunscreen and an adequate SPF number for the child's protection against the sun. The unit measures and records accumulated UV exposure and displays the accumulated dose in the form of up to "10 suns" on a liquid crystal display. When the tenth sun has appeared, an alarm sounds which means that the child should be taken indoors in order to avoid overexposure.

Summary

The EMTEC sensors include a range of products appropriate for different uses in different locations. It is envisioned that this technology, used in conjunction with public health education, will have a significant impact on sun-oriented behavior. The message being delivered will be accompanied by quantified information directly useful for gauging sun exposure.

With the technological elements now in use, a low-cost, ground-based UV monitoring network can be established. EMTEC is actively establishing such a facility in association with interested organizations on a worldwide basis. Dissemination of this information will raise public awareness of skin cancer issues and assist institutions in vital research.

The development of the EMTEC sensor marks a new era in UV monitoring and places an emphasis on the responsible use of products based on new technology.

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GENDER-RELATED ISSUES IN MALIGNANT MELANOMA *(continued from page 124)*

Centers for Disease Control (CDC) show that the death rate from melanoma in women increased 21% from 1973 to 1988 while the death rate for men increased 50%[6]. In fact, according to the CDC, the death rate for melanoma in men is increasing faster than for any other cancer.

Conclusion

The incidence of melanoma is increasing most rapidly in women under 40 whereas the death rate from this tumor is rising more rapidly in older men. Because the only cure for this cancer remains early detection and treatment, increased public education and promotion of awareness among both women and men are needed in order to minimize the hazards from melanoma.

Editorial comment:

Dr. Rigel is a "world authority" on melanoma.

Norman Goldstein MD

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